POSTDOCTORAL FELLOWSHIP AWARDS

MASANORI HATAKEYAMA, M.D., Ph.D., WHITEHEAD INSTITUTE FOR BIOMEDICAL RESEARCH — $20,000

Elucidation of the Regulatory Mechanism for Retinoblastoma Protein Activity by Employing Yeast Cell Cycle Machineries

Inactivation of the retinoblastoma gene (RB) has been implicated in the pathogenesis of a variety of human malignancies including leukemia. The retinoblastoma gene product (pRB) is considered to be a critical negative regulator of cell growth and this pRB function seems to be tightly regulated by cell-cycle dependent modification known as phosphorylation. In this project, the molecular mechanism underlying the pRB phosphorylation, a critical process to neutralize pRB-mediated growth inhibition, will be investigated by employing yeast *Saccharomyces cerevisciae*, a lower eukaryotic microorganism that possesses highly conserved cell cycle machineries throughout evolution. The yeast system in which incisive genetic approaches are available will provide important clues to understand the role of pRB in the cell growth control and the development of cancer.

ISOBEL ANNE WADMAN, Ph.D., UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL CENTER AT DALLAS — $20,000

The Regulation of TAL1 by Protein Phosphorylation

Patients with T-cell acute lymphoblastic leukemia (T-ALL) face a dismal prognosis characterized by treatment failure and a high mortality rate. Recent studies have shown that alteration of the *TAL1* gene is the most common genetic lesion associated with this form of leukemia. These studies indicate that aberrant activity of the *TAL1* gene product is likely to be a critical factor in the formation of T-ALL. Therefore, it is imperative to identify the mechanisms by which *TAL1* activity is normally regulated and to determine whether the same regulatory mechanisms can be harnessed for improved treatment of T-ALL patients. This project is designed to examine whether the transcriptional activity of *TAL1* is controlled by protein phosphorylation, a regulatory mechanism commonly utilized in biological systems.